



# Department of Toxic Substances Control



Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630

Winston H. Hickox  
Secretary for  
Environmental  
Protection

May 6, 1999

Gray Davis  
Governor

Ms. Shyamala Sundaram  
Department of The Army  
Headquarters, 63D U.S. Army Regional  
Support Command  
P.O. Box 3001  
Los Alamitos, California 90720-1301

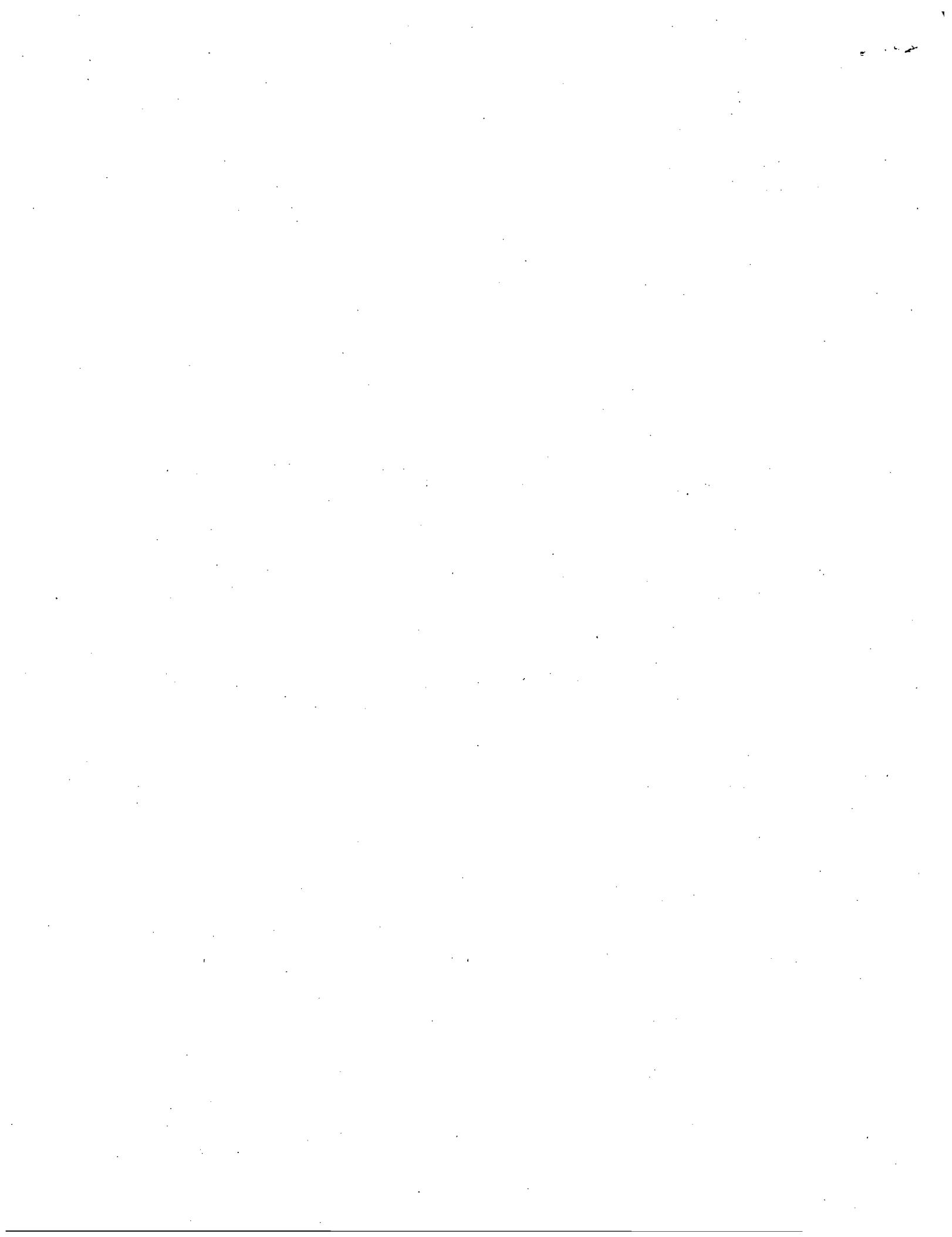
Dear Ms. Sundaram:

**DRAFT PRELIMINARY SITE ASSESSMENT (PSA) REPORT FOR SCHROEDER HALL UNITED STATES ARMY RESERVE CENTER (USARC), LONG BEACH, CALIFORNIA**

The Department of Toxic Substances Control (DTSC) reviewed the above-referenced document, dated March 22, 1999 and received on March 23, 1999. In our letter dated July 20, 1998 we expressed concerns about the lack of background information on the facility historical usage and past operational activities.

The draft PSA report and a visual site inspection provided adequate information to address our previous concerns. The following are our findings:

1. DTSC agrees with the no further action recommendation for the northeast corner of the facility, the no vegetation growth area. The sample results indicated concentrations that were representative of background within this area. Additionally, during our site familiarization visit on March 23, 1999, it became apparent that the lack of vegetation may be due to lack of sufficient water and/or the gravelly-sandy-clayey nature of the soil within this area.
2. DTSC has evaluated the draft PSA results and ascertained that a quantitative confirmatory data is required for the former drum storage area by the current hazardous waste storage unit and the printing process waste former drum storage area. The quantitative information lacking is the surface soil samples, subsurface soil sample, and groundwater data. Please revise section 4.0, recommendations and conclusions to reflect the further action recommendation and submit a workplan within three months of receipt of this letter to address this concern.
3. The PSA report identified wash rack and oil-water separator units at the facility. There were no sample analytical results presented for these units. As a result, DTSC does not

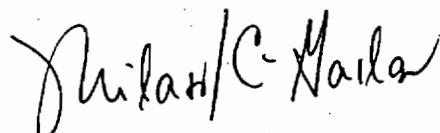


Ms. Shyamala Sundaram  
May 6, 1999  
Page 2

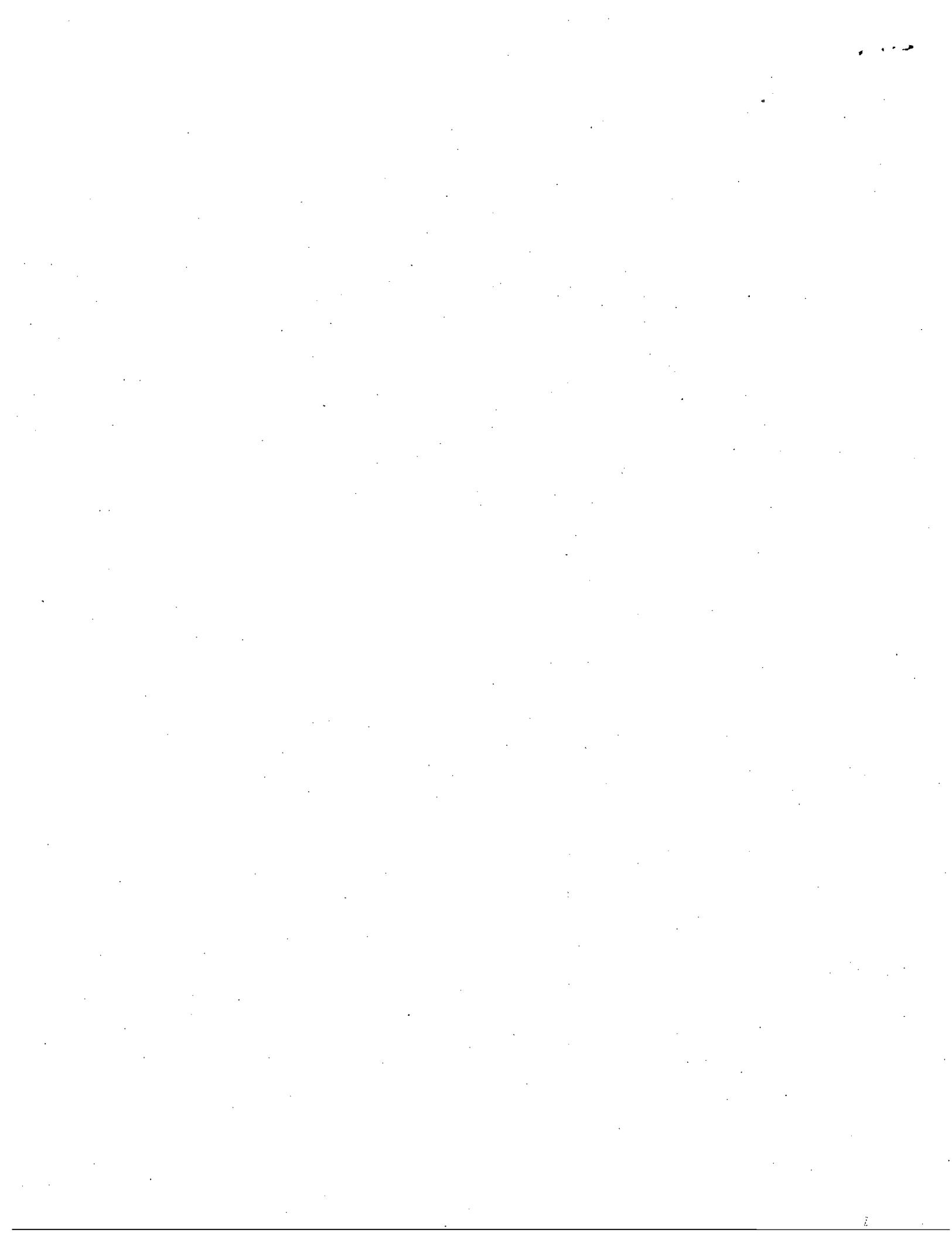
concur with a no further action recommendation regarding the potential past (historical) and present hazardous substance release at these units. A workplan to address past release at these units would be necessary to obtain regulatory concurrence. However, due to the intermittent operational use of these units, we agree with the 1996 Site Survey recommendation to obtain a permit for the oil/water separator to ensure that these units are properly investigated and closed in the future. The draft PSA, page 2-5 should be revised and the final PSA should reflect the USARC's further action recommendation on the permitting and workplan submittal.

If you have any questions regarding this matter, please feel free to contact  
Mr. Omoruyi Patrick at (714) 484-5452.

Sincerely,



Milasol C. Gaslan, P.E.  
Unit Chief  
Federal Facilities Unit A  
Southern California Operations  
Office of Military Facilities





# Department of Toxic Substances Control



Winston H. Hickox  
Agency Secretary  
California Environmental  
Protection Agency

Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630

Gray Davis  
Governor

January 7, 2002

Lt. Col. Joseph Moscariello  
Headquarters, 63D U.S. Army  
Building 7  
4235 Yorktown Ave.  
Los Alamitos, California 90720

## 63D REGIONAL SUPPORT COMMAND - RCRA SOIL INVESTIGATION REPORT ON FIELD WITH NO GROWTH AREA AT SCHROEDER HALL U.S. ARMY RESERVE CENTER, (USARC), LONG BEACH, CALIFORNIA

Dear Lt. Col. Moscariello:

The Department of Toxic Substances Control (DTSC) has completed the review of the RCRA soil investigation report dated November 20, 2001 for Installation Restoration Army Reserve Center - Schroeder Hall in Long Beach. Based on our review of the soil sampling results presented in this report, we concur with the No Further Action (NFA) recommendation and the removal of this site from the IRP list for the 63D Regional Support Command.

Please be advised that DTSC's agreement to remove this site from the IRP list does not represent certification or validation that the entire facility does not have hazardous substance releases. Should DTSC become aware of potential hazardous substance releases, it will initiate appropriate action to correct the problem.

Thank you for your request. If you have any questions regarding this matter, please contact Mr. Isaac Hirbawi, Project Manager at (714) 484-5445.

Sincerely,

John E. Scandura, Chief  
Southern California Branch  
Office of Military Facilities

cc: See next page

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at [www.dtsc.ca.gov](http://www.dtsc.ca.gov).*



Lt. Col. Joseph Moscariello

January 7, 2002

Page 2

cc: Mr. Stephen J. Volk  
Environmental Scientist (Adecco/TAD)  
63D RSC CST Environmental Division  
3225 Willowpass Road  
Concord, California 94519





REPLY TO  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, 63D REGIONAL SUPPORT COMMAND  
4235 YORKTOWN AVENUE  
LOS ALAMITOS, CALIFORNIA 90720-5002

AFRC-CCA-ENV (200-1)

20 November 2001

**DEPARTMENT OF TOXICS SUBSTANCE CONTROL**  
Federal Facilities Unit A; Southern California Operations  
Attn: Isaac Hirbawi  
5796 Corporate Avenue  
Cypress, California 90630

**63D REGIONAL SUPPORT COMMAND SUBMITTAL OF RCRA SOIL INVESTIGATION REPORT  
ON FIELD WITH NO GROWTH AREA AT SCHROEDER HALL U.S. ARMY RESERVE CENTER  
(USARC), LONG BEACH, CALIFORNIA**

Dear Mr. Hirbawi:

The 63D Regional Support Command (RSC) is providing the following RCRA Soil Investigation Report that was conducted on the Field with No Growth for your review and comment.

As this site is not covered through the Installation Restoration Program (IRP) any request by your office for DSMA funds from the Corps of Engineers, for review of this material will be denied.

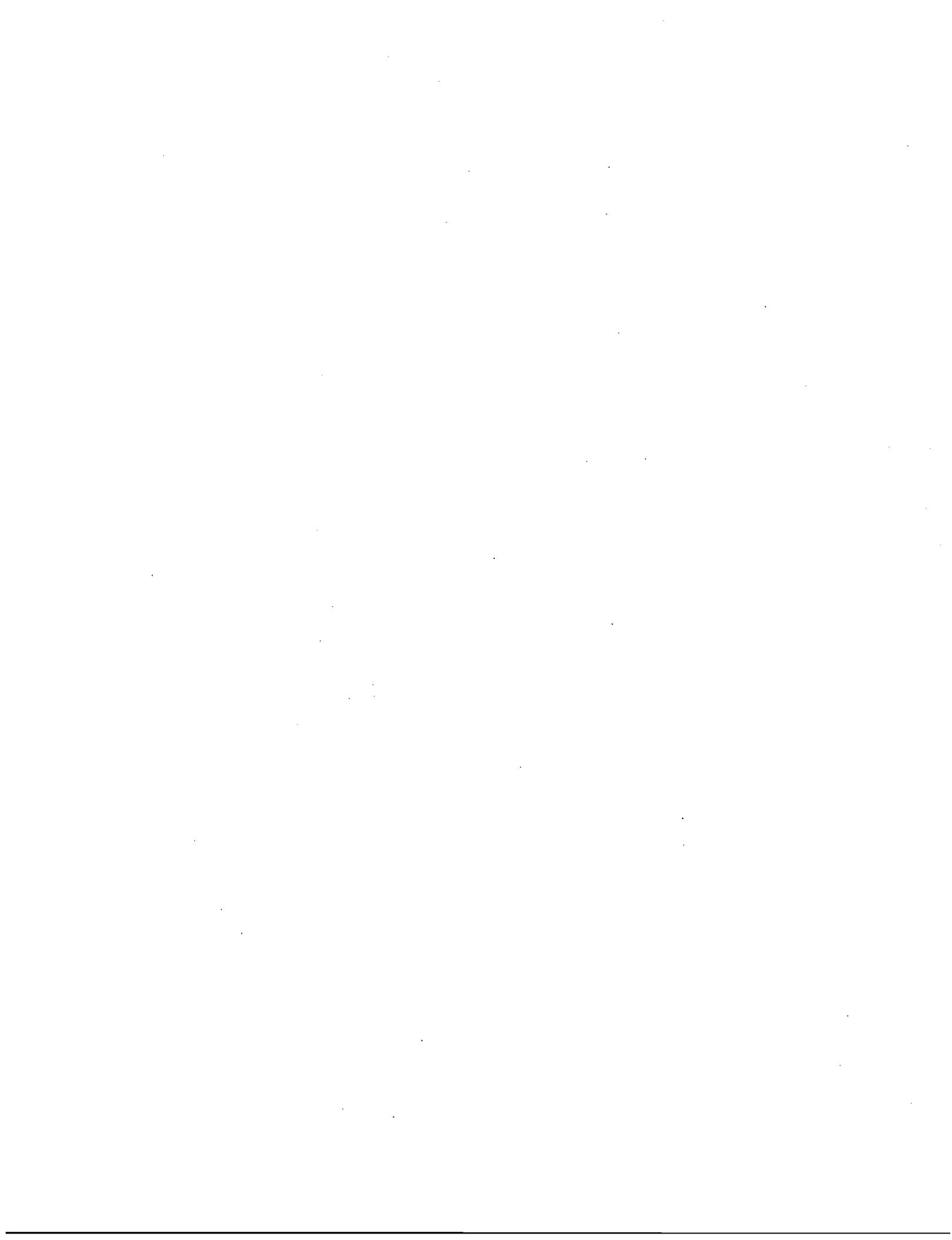
In addition, the 63D RSC noted in the report that no hazardous substances were found to exceed California Title 22 and EPA Region 9 Preliminary Remediation Goals (PRGs). As a result of these findings, the 63D RSC has determined that no further documentation or sampling will be conducted for the site-Field with No Growth.

The 63D RSC respectfully requests your response to this RCRA Soil Investigation Report by 21 December 2001 so that this matter may be closed.

Please contact Ms. Diane A. Clark (562) 795-1445 or Mr. J. Stephen Volk at (925) 688-1943 if you have any questions concerning this matter. We appreciate your support and efforts towards completing this action and look forward to hearing from you soon.

Sincerely,

Encl.  
as  
JOSEPH MOSCARIELLO  
LTC, GS, USAR  
Deputy Chief of Staff, Engineer





TECHNICAL AND ADVISORY SERVICES • ENVIRONMENTAL HEALTH AND SAFETY  
10771 Noel St., Los Alamitos, CA 90720 714/220-3922 FAX 714/220-2081

October 24, 2001

Valerie Noller  
Adecco Technical  
400 S. Tennessee St.  
McKinney, TX 75069

Re: Soil investigation at Long Beach U.S. Army Reserve Center- 63D on Long Beach  
USARC; HSA Project Number 01LA461

Dear Ms. Noller:

The following tables present the final field and laboratory data for soil samples which were collected during soil excavation at the 63D Long Beach U.S. Army Reserve Center, grass and gravel area. Four soil borings were performed in an area of no growth and were collected between one and two feet below ground surface (bgs) using a hand auger. Only one sample was collected per boring.

A total of four laboratory samples were collected into glass containers in accordance with Environmental Protection Agency Solid Waste (EPA SW-846) sample collection procedures. The samples were labeled and placed into a cooler for preservation and transported to HSA's laboratory under chain of custody procedures. Each of the individual soil samples were subsequently sub-sampled and analyzed for the California seventeen (17) hazardous waste metals (CAM 17 metals - EPA 3051/6010), total volatile and extractable organic compounds including benzene, toluene, ethyl benzene, and xylenes (VOCs and BTEX - EPA 8015B and 8021B), pesticides (EPA 8081A), and polychlorinated biphenyls (PCBs - EPA 8082).

Results of the laboratory analyses are compared in the following tables to the California Title 22 Total Threshold Limit Values, California Title 22 Soluble Threshold Limit Values and the Environmental Protection Agency Preliminary Remediation Goals for industrial soils. The state of California Title 22 values are the regulatory standards that have been established for the definition of hazardous waste. The Region 9 Preliminary Remediation Goals (PRGs) are risk-based tools for evaluating and cleaning up contaminated sites. They are being used to streamline and standardize all stages of the risk decision-making process. The guidance provided by the PRGs is not final Agency action. It is not intended, nor can it be relied upon to create any rights enforceable by any party in litigation with the United States. EPA officials may decide to follow the guidance provided herein, or act at variance with the guidance, based on an analysis of specific circumstances.

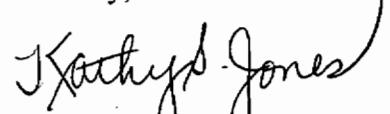
Based upon the results provided for these four soil samples, none of the samples demonstrated hazardous waste characteristics when evaluating sample results per the California Title 22 Hazardous Waste Characteristics or when evaluating sample results to the EPA Preliminary Remediation Goals.



63D Long Beach US Army Reserve Center  
October 24, 2001  
page 2 of 9

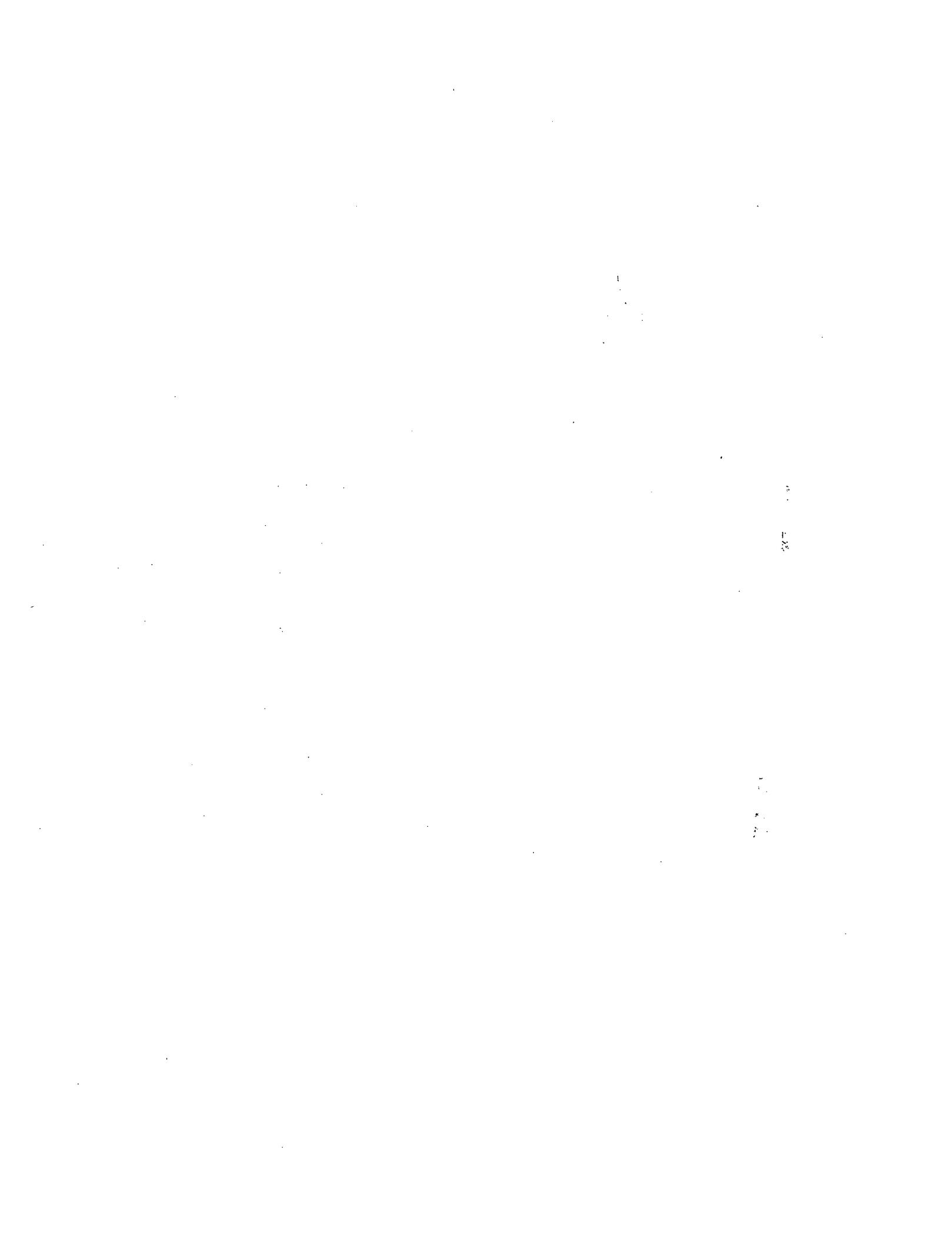
If you have any questions or require additional clarifications regarding this report, please feel free to contact us at (714) 220-3922.

Sincerely,



Kathy S. Jones, CIH  
Senior Industrial Hygiene Consultant

Enclosures



**Table I - Soil Sampling Results for Metals**

Long Beach U.S. Army Reserve Center  
 Grass & Gravel Area  
 3800 E. Willow Street  
 Long Beach, CA  
 March 21, 2001

Location/ Description	Sample Num.	Ag	As	Ba	Be	Cd	Cr	Cu	Hg	Se	Mo	Th	Ni	Pb	Sb	Va	Zn
(ppm as mg/kg)																	
Northwest corner	1	<5	<10	135	<1	<2.5	15.2	<10	11.6	<0.02	<5	<25	13.0	10.9	<25	<25	47.9
Northeast corner	2	<5	<10	126	<1	<2.5	12.4	<10	11.6	<0.02	<5	<25	13.0	7.9	<25	<25	41.0
Southwest corner	3	<5	<10	120	<1	<2.5	<5	<10	<5	<0.2	<5	<25	<10	15.0	<25	<25	38.5
Southeast corner	4	<5	<10	15.2	<1	<2.5	<5	<10	<5	<0.2	<5	<25	<10	<5	<25	<25	38.8
<b>Standards &amp; Guidelines</b>																	
California Title 22 Total Threshold Limit Concentrations (TTLCs)		500	500	10,000	75	100	500 - 2,500	8,000	2,500	20	100	3,500	700	2,000	1,000	500	2,400
California Title 22 Soluble Threshold Limit Concentrations (STLCs)		5 mg/l	5.0 mg/l	100 mg/l	0.75 mg/l	1.0 mg/l	5 mg/l	80 mg/l	25 mg/l	0.2 mg/l	1.0 mg/l	350 mg/l	7.0 mg/l	20 mg/l	5.0 mg/l	15 mg/l	24 mg/l
Environmental Protection Agency Preliminary Remediation Goals (PRGs) (Industrial Soils)	10,000	440-nc	100,000	2,200	810	450	100,000	76,000	610	10,000	10,000	130	41,000	750	820	14,000	100,000

**Abbreviations:** < = less than; BLD = below the limit of detection; ppm as mg/kg = parts per million as milligrams contaminant per kilogram of material; nc = non-cancer risk; c = cancer risk; Ag = silver; As = arsenic; Ba = barium; Be = beryllium; Cd = cadmium; Cr = chromium; Co = cobalt; Cu = copper; Fe = iron; Mg = magnesium; Mo = molybdenum; Mn = manganese; Ni = nickel; Pb = lead; Sb = lead; Sb = antimony; Va = vanadium; Zn = zinc



**Table II - Soil Sampling Results for Volatile Organic Compounds (BTEX + MTBE)**

Long Beach U.S. Army Reserve Center  
 Grass & Gravel Area  
 3800 E. Willow Street  
 Long Beach, CA  
 March 21, 2001

Location/Description	Sample #	Benzene ( $\mu\text{g}/\text{kg}$ )	Toluene ( $\mu\text{g}/\text{kg}$ )	Ethylbenzene ( $\mu\text{g}/\text{kg}$ )	Xylenes (total) ( $\mu\text{g}/\text{kg}$ )	Methyl tert-Butyl Ether ( $\mu\text{g}/\text{kg}$ )
Northwest corner	1	<5.0	<5.0	<5.0	<1.5	<5.0
Northeast corner	2	<5.0	<5.0	<5.0	<1.5	<5.0
Southwest corner	3	<5.0	<5.0	<5.0	<1.5	<5.0
Southeast corner	4	<5.0	<5.0	<5.0	<1.5	<5.0
<b>Standards and Guidelines</b>						
California Title 22 Total Threshold Limit Concentrations (TTLCs)	—	—	—	—	—	—
California Title 22 Soluble Threshold Limit Concentrations (STLCs)	—	—	—	—	—	—
Environmental Protection Agency Preliminary Remediation Goals (PRGs) (Industrial Soils)	1,500	520,000	230,000	210,000	37,000	
<b>Abbreviations:</b>						



**Table III - Soil Sampling Results for Organochlorine Pesticides**

Long Beach U.S. Army Reserve Center  
 Grass & Gravel Area  
 3800 E. Willow Street  
 Long Beach, CA  
 March 21, 2001

Sample #	1	2	3	4	California Title 22 Total Threshold Limit Concentrations (TTLCS)	California Title 22 Soluble Threshold Limit Concentrations (STLCS)	EPA Preliminary Remediation Goals (PRGS) (Industrial Soils)
Location / Description	Northwest corner	Northeast corner	Southwest corner	Southeast corner			
Aldrin ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	1,400	140 $\mu\text{g}/\text{l}$	150
alpha-BHC ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	—
alpha-Chlordane ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	2,500	250 $\mu\text{g}/\text{l}$	—
beta-BHC ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	—
delta-BHC ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	—
4,4'-DDD ( $\mu\text{g}/\text{kg}$ )	<3.3	<3.3	<3.3	<3.3	1,000	100 $\mu\text{g}/\text{l}$	1,700
4,4'-DDE ( $\mu\text{g}/\text{kg}$ )	4.4	<3.3	7.9	<3.3	1,000	100 $\mu\text{g}/\text{l}$	1,200
4,4'-DDT ( $\mu\text{g}/\text{kg}$ )	<3.3	<3.3	<3.3	<3.3	1,000	100 $\mu\text{g}/\text{l}$	1,200
Dieldrin ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	8,000	800 $\mu\text{g}/\text{l}$	150
Endrin ( $\mu\text{g}/\text{kg}$ )	<3.3	<3.3	<3.3	<3.3	200	20 $\mu\text{g}/\text{l}$	260,000
Endrin aldehyde ( $\mu\text{g}/\text{kg}$ )	<3.3	<3.3	<3.3	<3.3	—	—	—
gamma-BHC (Lindane) ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	4,000	400 $\mu\text{g}/\text{l}$	—
gamma-Chlordane ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	2,500	250 $\mu\text{g}/\text{l}$	—
Endosulfan I ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	—



Table III - Soil Sampling Results for Organochlorine Pesticides, cont'd.

Long Beach U.S. Army Reserve Center  
 Grass & Gravel Area  
 3800 E. Willow Street  
 Long Beach, CA  
 March 21, 2001

Sample #	1	2	3	4	California Title 22 Soluble Threshold Limit	California Title 22 Soluble Threshold Limit	EPA Preliminary Remediation Goals (PRGs) (Industrial Soils)
Location/Description	Northwest corner	Northeast corner	Southwest corner	Southeast corner	Concentrations (TTHCs)	Concentrations (STLCs)	
Endosulfan II ( $\mu\text{g}/\text{kg}$ )	<3.3	<3.3	<3.3	<3.3	—	—	—
Endosulfan sulfate ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	—
Heptachlor ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	4,700	470 $\mu\text{g}/\text{l}$	550
Heptachlor epoxide ( $\mu\text{g}/\text{kg}$ )	<1.7	<1.7	<1.7	<1.7	—	—	270
Methoxychlor ( $\mu\text{g}/\text{kg}$ )	<17	<17	<17	<17	100,000	10,000 $\mu\text{g}/\text{l}$	4,400,000
Toxaphene ( $\mu\text{g}/\text{kg}$ )	<67	<67	<67	<67	5,000	500 $\mu\text{g}/\text{l}$	2,200

Abbreviations:





Table IV - Soil Sampling Results for Polychlorinated Biphenyls

Long Beach U.S. Army Reserve Center  
Grass & Gravel Area  
3800 E. Willow Street  
Long Beach, CA  
March 21, 2001

Location/Description	Sample #	Aroclor 1016 ( $\mu\text{g}/\text{kg}$ )	Aroclor 1221 ( $\mu\text{g}/\text{kg}$ )	Aroclor 1232 ( $\mu\text{g}/\text{kg}$ )	Aroclor 1242 ( $\mu\text{g}/\text{kg}$ )	Aroclor 1254 ( $\mu\text{g}/\text{kg}$ )	Aroclor 1260 ( $\mu\text{g}/\text{kg}$ )
Northwest corner	1	<33	<33	<33	<33	<33	<33
Northeast corner	2	<33	<33	<33	<33	<33	<33
Southwest corner	3	<33	<33	<33	<33	<33	<33
Southeast corner	4	<33	<33	<33	<33	<33	<33
<b>Standards and Guidelines</b>							
California Title 22 Total Threshold Limit Concentrations (TTLCs)		50,000	50,000	50,000	50,000	50,000	50,000
California Title 22 Soluble Threshold Limit Concentrations (STLCs)		5,000 $\mu\text{g/l}$					
Environmental Protection Agency Preliminary Remediation Goals (PRGs) (Industrial Soils)	29,000	1,000	1,000	1,000	1,000	1,000	1,000
<b>Abbreviations:</b>							





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Table V - Soil Sampling Results for Volatile and Extractable Petroleum Hydrocarbons

Long Beach U.S. Army Reserve Center  
Grass & Gravel Area  
3800 E. Willow Street  
Long Beach, CA  
March 21, 2001

Location/ Description	Sample #	Total Extractable Pet. Hydrocarbons (mg/kg)	Total Volatile Pet. Hydrocarbons (mg/kg)	Unknown Hydrocarbons (mg/kg)
Northwest corner	1	<10	<1.0	<1.0
Northeast corner	2	<10	<1.0	<1.0
Southwest corner	3	<10	<1.0	<1.0
Southeast corner	4	<10	<1.0	<1.0
<b>Standards and Guidelines</b>				
California Title 22 Total Threshold Limit Concentrations (TTLCs)		-	-	--
California Title 22 Soluble Threshold Limit Concentrations (STLCs)		-	-	--
Environmental Protection Agency Preliminary Remediation Goals (PRGs) (Industrial Soils)		-	-	--
<b>Abbreviations:</b>				



## **LABORATORY REPORTS**



**LABORATORY REPORT**

Report Number : 112652  
 Project Number : 01LA461  
 External No. : AFRC-CCA-ENV

VALERIE NOLLER  
 ADECCO TECHNICAL  
 400 S TENNESSEE ST  
 MCKINNEY TX 75069

Date Received : 22-MAR-01  
 Date Completed : 11-APR-01  
 Date Sent : 11-APR-01  
 Page # 1 of 3

Sample Description : 4 - Soil Samples - Long Beach US Army Reserve Center 3800 E. Willow Ave. Long Beach, CA.

Method of Extraction : Microwave (EPA 3051 - modified)

Method of Analysis : Inductively coupled argon plasma, atomic emission spectroscopy (EPA 6010)

Auto No.	Submitter Sample Number	Test Description	EPA Method	ppm	Detection Limit	Maximum Contaminant Level
242808	#1 Northwest Corner	TTLC Antimony	6010	<25	25 ppm	500 ppm
		TTLC Arsenic	6010	<10	10 ppm	500 ppm
		TTLC Barium	6010	135	5 ppm	10000 ppm
		TTLC Beryllium	6010	<1	1 ppm	75 ppm
		TTLC Cadmium	6010	<2.5	2.5 ppm	100 ppm
		TTLC Chromium	6010	15.2	5 ppm	2500 ppm
		TTLC Cobalt	6010	<10	10 ppm	8000 ppm
		TTLC Copper	6010	11.6	5 ppm	2500 ppm
		TTLC Lead	6010	10.9	5 ppm	1000 ppm
		TTLC Mercury	7471	<0.2	0.2 ppm	20 ppm
		TTLC Molybdenum	6010	<25	25 ppm	3500 ppm
		TTLC Nickel	6010	13.0	10 ppm	2000 ppm
		TTLC Selenium	6010	<5	5 ppm	100 ppm
		TTLC Silver	6010	<5	5 ppm	500 ppm
		TTLC Thallium	6010	<25	25 ppm	700 ppm
		TTLC Vanadium	6010	<25	25 ppm	2400 ppm
		TTLC Zinc	6010	47.9	5 ppm	5000 ppm
242809	#2 Northeast Corner	TTLC Antimony	6010	<25	25 ppm	500 ppm
		TTLC Arsenic	6010	<10	10 ppm	500 ppm
		TTLC Barium	6010	126	5 ppm	10000 ppm
		TTLC Beryllium	6010	<1	1 ppm	75 ppm
		TTLC Cadmium	6010	<2.5	2.5 ppm	100 ppm
		TTLC Chromium	6010	12.4	5 ppm	2500 ppm
		TTLC Cobalt	6010	<10	10 ppm	8000 ppm
		TTLC Copper	6010	11.6	5 ppm	2500 ppm
		TTLC Lead	6010	7.9	5 ppm	1000 ppm
		TTLC Mercury	7471	<0.2	0.2 ppm	20 ppm
		TTLC Molybdenum	6010	<25	25 ppm	3500 ppm
		TTLC Nickel	6010	11.6	10 ppm	2000 ppm
		TTLC Selenium	6010	<5	5 ppm	100 ppm
		TTLC Silver	6010	<5	5 ppm	500 ppm
		TTLC Thallium	6010	<25	25 ppm	700 ppm

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This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without written authorization is prohibited.



**LABORATORY REPORT**

Report Number : 112652

Page # 2 of 3

Method of Extraction : Microwave (EPA 3051 - modified)

Method of Analysis : Inductively coupled argon plasma, atomic emission spectroscopy (EPA 6010)

Auto No.	Submitter Sample Number	Test Description	EPA Method	ppm	Detection Limit	Maximum Contaminant Level
242809	#2 Northeast Corner	TTLC Vanadium	6010	<25	25 ppm	2400 ppm
		TTLC Zinc	6010	41.0	5 ppm	5000 ppm
242810	#3 Southwest Corner	TTLC Antimony	6010	<25	25 ppm	500 ppm
		TTLC Arsenic	6010	<10	10 ppm	500 ppm
		TTLC Barium	6010	120	5 ppm	10000 ppm
		TTLC Beryllium	6010	<1	1 ppm	75 ppm
		TTLC Cadmium	6010	<2.5	2.5 ppm	100 ppm
		TTLC Chromium	6010	<5	5 ppm	2500 ppm
		TTLC Cobalt	6010	<10	10 ppm	8000 ppm
		TTLC Copper	6010	<5	5 ppm	2500 ppm
		TTLC Lead	6010	15.0	5 ppm	1000 ppm
		TTLC Mercury	7471	<0.2	0.2 ppm	20 ppm
		TTLC Molybdenum	6010	<25	25 ppm	3500 ppm
		TTLC Nickel	6010	<10	10 ppm	2000 ppm
		TTLC Selenium	6010	<5	5 ppm	100 ppm
		TTLC Silver	6010	<5	5 ppm	500 ppm
		TTLC Thallium	6010	<25	25 ppm	700 ppm
		TTLC Vanadium	6010	<25	25 ppm	2400 ppm
		TTLC Zinc	6010	38.5	5 ppm	5000 ppm
242811	#4 Southeast Corner	TTLC Antimony	6010	<25	25 ppm	500 ppm
		TTLC Arsenic	6010	<10	10 ppm	500 ppm
		TTLC Barium	6010	15.2	5 ppm	10000 ppm
		TTLC Beryllium	6010	<1	1 ppm	75 ppm
		TTLC Cadmium	6010	<2.5	2.5 ppm	100 ppm
		TTLC Chromium	6010	<5	5 ppm	2500 ppm
		TTLC Cobalt	6010	<10	10 ppm	8000 ppm
		TTLC Copper	6010	<5	5 ppm	2500 ppm
		TTLC Lead	6010	<5	5 ppm	1000 ppm
		TTLC Mercury	7471	<0.2	0.2 ppm	20 ppm

10771 Noel St., Los Alamitos, CA 90720 714/220-3922 Fax 714/220-2081 e-mail hsa@healthscience.com

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without written authorization is prohibited.



**LABORATORY REPORT**

Report Number : 112652

Page # 3 of 3

Method of Extraction : Microwave (EPA 3051 - modified)

Method of Analysis : Inductively coupled argon plasma, atomic emission spectroscopy (EPA 6010)

Auto No.	Submitter Sample Number	Test Description	EPA Method	ppm	Detection Limit	Maximum Contaminant Level
242811	#4 Southeast Corner	TTLC Molybdenum	6010	<25	25 ppm	3500 ppm
		TTLC Nickel	6010	<10	10 ppm	2000 ppm
		TTLC Selenium	6010	<5	5 ppm	100 ppm
		TTLC Silver	6010	<5	5 ppm	500 ppm
		TTLC Thallium	6010	<25	25 ppm	700 ppm
		TTLC Vanadium	6010	<25	25 ppm	2400 ppm
		TTLC Zinc	6010	38.8	5 ppm	5000 ppm

Note: Composite waste samples are inherently non-homogeneous. Therefore, TTLC, TCLP & STLC results on different sub-sections of the sample may not be comparable.

Remarks : Sample(s) and sampling data as provided :  
by : TOM SHULTZ

Analyst(s) : TT/SH/ST

Ref :

Reviewed by:

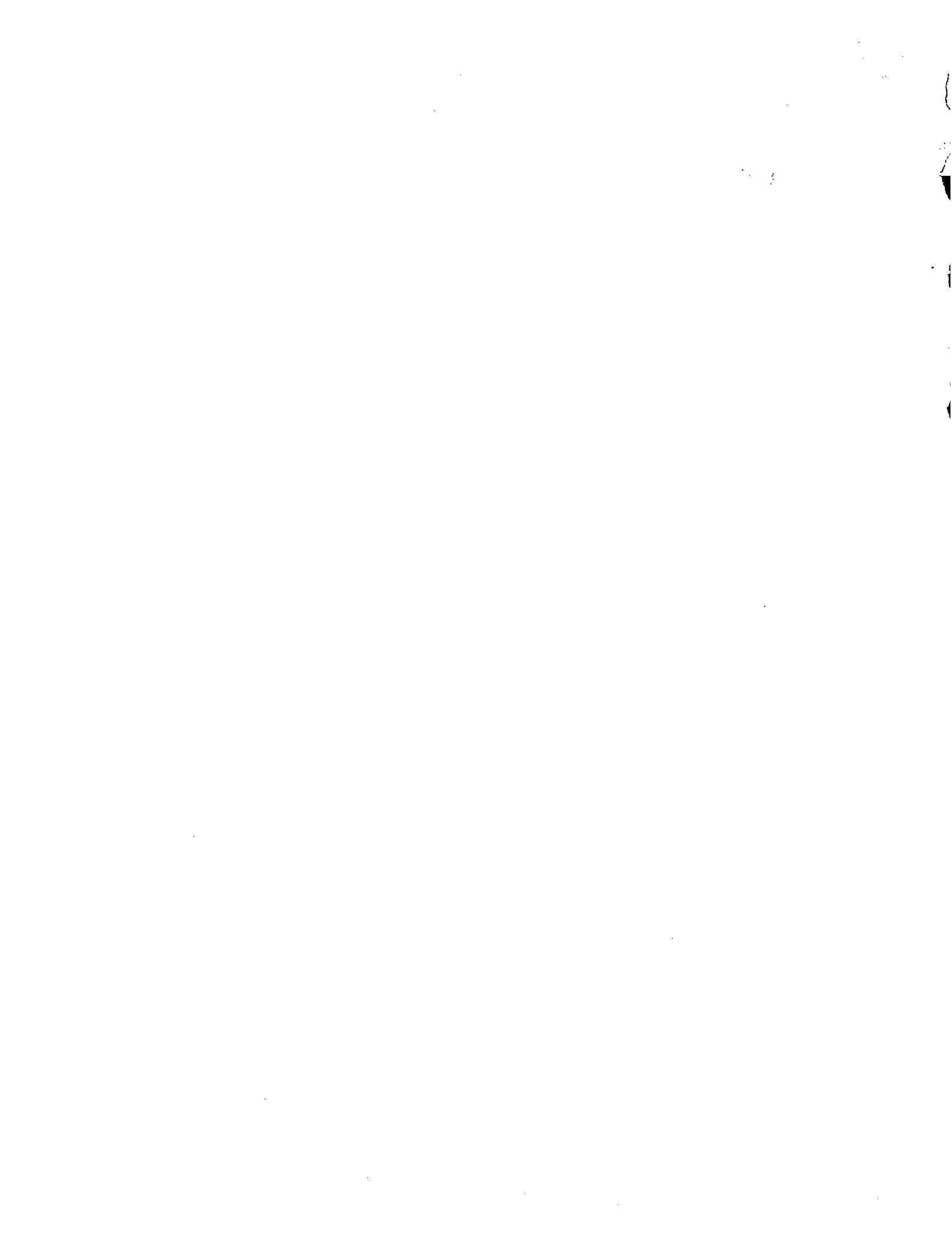
Thomas Shultz  
Thomas Shultz

Technical Approval:

Jaime Steedman-Lyde  
Laboratory Director, Jaime Steedman-Lyde

10771 Noel St., Los Alamitos, CA 90720 714/220-3922 Fax 714/220-2081 e-mail hsa@healthscience.com

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SEVERN  
TRENT  
SERVICES

April 3, 2001

STL LOT NUMBER: **E1C230310**

**STL Los Angeles**  
1721 South Grand Avenue  
Santa Ana, CA 92705-4808

Tel: 714 258 8610  
Fax: 714 258 0921  
[www.stl-inc.com](http://www.stl-inc.com)

Tom Shultz  
Health Science Associates  
10771 Noel Street  
Los Alamitos, CA 90720

Dear Mr. Shultz,

This report contains the analytical results for the four samples received under chain of custody by STL Los Angeles on March 23, 2001.

Preliminary results were sent via facsimile on March 30.

STL Los Angeles certifies that the test results provided in this report meet all the requirements of NELAC. Our certificate number is 01118CA. All applicable quality control procedures met method-specified acceptance criteria except as noted in the following page. Any matrix-related anomalies are indicated using footnotes within the report.

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report contains 000052 pages.

If you have any questions, please feel free to call me at 714-258-8610.

Sincerely,



Jesse Bacwaden  
Project Manager

cc: Project File



LOT NUMBER E1C230310

**Affected Samples:**

- 1: Sample # 1
- 2: Sample # 2
- 3: Sample # 3
- 4: Sample # 4

**Affected Method:**

8081A

Nonconformance E01580

**Case Narrative:**

*There was insufficient sample volume provided to prepare a project-specific MS/MSD. A duplicate LCS has been prepared to provide accuracy and precision measurement for the samples in this project.*

Nonconformance E01588

**Case Narrative:**

*The LCSD percent recoveries of 4,4'-DDT (125), and Dieldrin (121) were outside the percent recovery criteria of 80-120. All data were analyzed twice. The initial data (column B) for the LCS/LCSD were within the percent recovery criteria, but the closing standard (16.24%) was outside the %D criteria of </= 15%.*

*The samples were ND for 4,4'-DDT and Dieldrin. The primary data (column A) are reported.*

000002



## **CHAIN OF CUSTODY**

10771 Noel St., Los Alamitos, CA 90720 714/220-3922

Associates

EIC 230310

CUSTOMER INFORMATION		PROJECT INFORMATION		BILLING INFORMATION		NUMBER OF CONTAINERS	
COMPANY:	<u>Health Science Assoc.</u>	PROJECT NAME/NUMBER:	<u>112-652</u>	BILL TO:	<u>Health Science Assoc.</u>	SAMPLE #	<u>1</u>
SEND REPORT TO:	<u>Thomas Shultz</u>	ADDRESS:	<u>As Above</u>	ADDRESS:	<u>As Above</u>	SAMPLE DATE	<u>10/10/00</u>
PHONE:	<u>1</u>	PHONE:	<u>1</u>	FAX:	<u>1</u>	SAMPLE	<u>1</u>
						CONTAINER TYPE	<u>1</u>

000003



**STL – LOS ANGELES  
PROJECT RECEIPT CHECKLIST**

Date: 3/23/01

Quantums Lot #: E1CZ30310

Client Name: Health Science Associates

Received by: AV

Delivered by :  Client  Airborne  Fed Ex  
 UPS  DES  Other

**Quote #:** \_\_\_\_\_

**Project:** \_\_\_\_\_

Date/Time Received: 3/23/01 13:20

DHL    Ultra-Ex    Rey B.

Initial / Date

Custody Seal Status:  Intact  Broken  None ..... *AV 3/22*

Custody Seal #(s): \_\_\_\_\_  No Seal # \_\_\_\_\_

Sample Container(s):  STL-LA     Client     N/A .....

Temperature(s) (COOLER/BLANK) in °C: 60°C (CORRECTED TEMP).....

Thermometer Used :  IR (Infra-red)  Digital (Probe) .....

**Samples:**  Intact  Broken  Other .....  
.....

**Anomalies:**  No  Yes (See Clouseau) .....

**Labeled by** \_\_\_\_\_

**Labeling checked by .....**

二 三 四 五 六 七 八 九

Turn Around Time:  RUSH-24HR  RUSH-48HR  RUSH-72HR  NORMAL ..... AO 3/22

**Short-Hold Notification:**  Ph  Wet Chem  Metals (Filter/Pres)  Encore  N/A ...

**Outside Analysis(es) (Test/Lab/Date Sent Out) :**

\*\*\*\*\* LEAVE NO BLANK SPACES : USE NVA \*\*\*\*\*

- HCl                  - Sodium Hydroxide                  - Zinc Acetate/Sodium Hydroxide                  - H2SO4                  - HNO3                  - HNO3-Field Blank                  - HNO3-Lab Blank  
 CGI-Clear Glass Jar      COR-Clear Glass Bottle      AGI-Amber Glass Jar      AGR-Amber Glass Bottle      PB: Poly Bottle      E-Essence Sampler      V:VGA

\* Number of VOA's w/ Headspace present

**LOGGED BY/DATE:**

AR/3-23-01 REVIEWED BY/DATE: JB/3-23-01



## **ANALYTICAL REPORT**

**PROJECT NO. 112652**

**Lot #: E1C230310**

**Tom Shultz**

**Health Science Associates**

**SEVERN TRENT LABORATORIES, INC.**

**Jesse Bacwaden  
Project Manager**

**April 3, 2001**

**000005**



## **EXECUTIVE SUMMARY - Detection Highlights**

**E1C230310**

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>Sample # 1 03/22/01 001</b>				
4, 4'-DDE	4 . 4	3 . 3	ug/kg	SW846 8081A
<b>Sample # 3 03/22/01 003</b>				
4, 4'-DDE	7 . 9	3 . 3	ug/kg	SW846 8081A

**000006**



## METHODS SUMMARY

E1C230310

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Extractable Petroleum Hydrocarbons	SW846 8015B	SANA AUTO-SHAKE
Organochlorine Pesticides	SW846 8081A	SW846 3550
PCBs by SW-846 8082	SW846 8082	SW846 3550
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5030
Volatiles by GC	SW846 8021B	SW846 5030B

### References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

000007



## SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates				PAGE 1
Lot #:	Project Number:	REPORTING	ANALYTICAL	Date Reported:
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Client Sample ID: Sample # 1				
Sample #: 001	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Volatiles by GC				Reviewed
Benzene	ND	5.0	ug/kg	SW846 8021B
Toluene	ND	5.0	ug/kg	SW846 8021B
Ethylbenzene	ND	5.0	ug/kg	SW846 8021B
Xylenes (total)	ND	15	ug/kg	SW846 8021B
Methyl tert-butyl ether	ND	5.0	ug/kg	SW846 8021B
Organochlorine Pesticides				Reviewed
Aldrin	ND	1.7	ug/kg	SW846 8081A
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	3.3	ug/kg	SW846 8081A
4,4'-DDE	4.4	3.3	ug/kg	SW846 8081A
4,4'-DDT	ND	3.3	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	3.3	ug/kg	SW846 8081A
Endrin aldehyde	ND	3.3	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	3.3	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	17	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A
PCBs by SW-846 8082				Reviewed
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082

(Continued on next page)



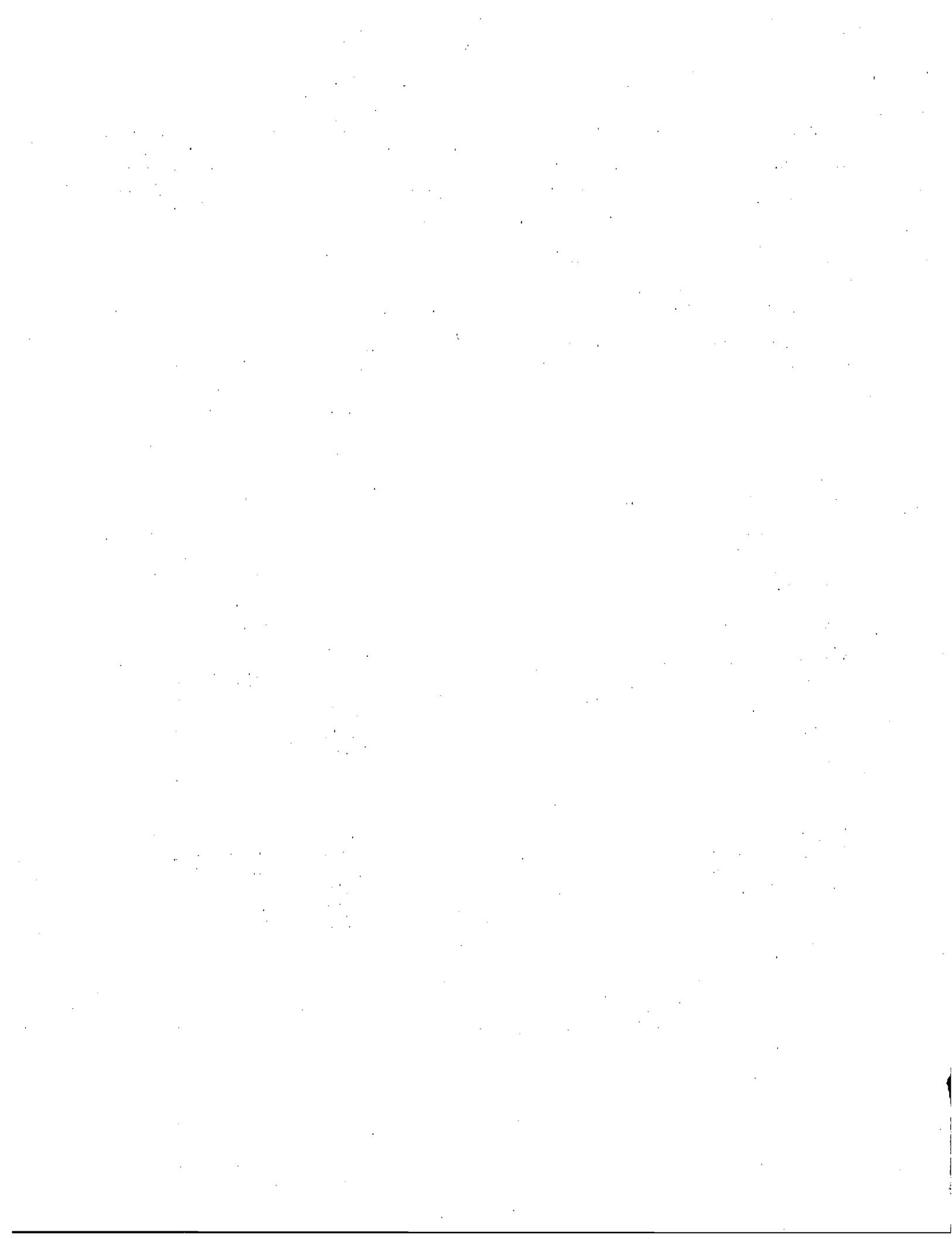
## SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates				PAGE 2
Lot #:	Project Number:	REPORTING	ANALYTICAL	Date Reported:
PARAMETER	RESULT	LIMIT	UNITS	METHOD
<b>Client Sample ID: Sample # 1</b>				
Sample #: 001	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Extractable Petroleum Hydrocarbons				Reviewed
TPH (as Diesel)	ND	10	mg/kg	SW846 8015B
Volatile Petroleum Hydrocarbons				Reviewed
TPH (as Gasoline)	ND	1.0	mg/kg	SW846 8015B
Unknown Hydrocarbon	ND	1.0	mg/kg	SW846 8015B
<b>Client Sample ID: Sample # 2</b>				
Sample #: 002	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Volatiles by GC				Reviewed
Benzene	ND	5.0	ug/kg	SW846 8021B
Toluene	ND	5.0	ug/kg	SW846 8021B
Ethylbenzene	ND	5.0	ug/kg	SW846 8021B
Xylenes (total)	ND	15	ug/kg	SW846 8021B
Methyl tert-butyl ether	ND	5.0	ug/kg	SW846 8021B
Organochlorine Pesticides				Reviewed
Aldrin	ND	1.7	ug/kg	SW846 8081A
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	3.3	ug/kg	SW846 8081A
4,4'-DDE	ND	3.3	ug/kg	SW846 8081A
4,4'-DDT	ND	3.3	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	3.3	ug/kg	SW846 8081A
Endrin aldehyde	ND	3.3	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	3.3	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	17	ug/kg	SW846 8081A

(Continued on next page)



## SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates				PAGE 3
Lot #:	Project Number:	REPORTING	ANALYTICAL	Date Reported:
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Client Sample ID: Sample # 2				
Sample #: 002	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Organochlorine Pesticides				Reviewed
Toxaphene	ND	67	ug/kg	SW846 8081A
PCBs by SW-846 8082				Reviewed
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082
Extractable Petroleum Hydrocarbons				Reviewed
TPH (as Diesel)	ND	10	mg/kg	SW846 8015B
Volatile Petroleum Hydrocarbons				Reviewed
TPH (as Gasoline)	ND	1.0	mg/kg	SW846 8015B
Unknown Hydrocarbon	ND	1.0	mg/kg	SW846 8015B
Client Sample ID: Sample # 3				
Sample #: 003	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Volatiles by GC				Reviewed
Benzene	ND	5.0	ug/kg	SW846 8021B
Toluene	ND	5.0	ug/kg	SW846 8021B
Ethylbenzene	ND	5.0	ug/kg	SW846 8021B
Xylenes (total)	ND	15	ug/kg	SW846 8021B
Methyl tert-butyl ether	ND	5.0	ug/kg	SW846 8021B
Organochlorine Pesticides				Reviewed
Aldrin	ND	1.7	ug/kg	SW846 8081A
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	3.3	ug/kg	SW846 8081A
4,4'-DDE	7.9	3.3	ug/kg	SW846 8081A

(Continued on next page)



## SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates PAGE 4  
Lot #: E1C230310 Date Reported: 4/02/01

Project Number: 112652

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
------------------	---------------	------------------------	--------------	--------------------------

Client Sample ID: Sample # 3

Sample #: 003 Date Sampled: 03/22/01

Date Received: 03/23/01 Matrix: SOLID

## Organochlorine Pesticides

Reviewed

4,4'-DDT	ND	3.3	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	3.3	ug/kg	SW846 8081A
Endrin aldehyde	ND	3.3	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	3.3	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	17	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A

## PCBs by SW-846 8082

Reviewed

Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082

## Extractable Petroleum Hydrocarbons

Reviewed

TPH (as Diesel)	ND	10	mg/kg	SW846 8015B
-----------------	----	----	-------	-------------

## Volatile Petroleum Hydrocarbons

Reviewed

TPH (as Gasoline)	ND	1.0	mg/kg	SW846 8015B
-------------------	----	-----	-------	-------------

Unknown Hydrocarbon	ND	1.0	mg/kg	SW846 8015B
---------------------	----	-----	-------	-------------

Client Sample ID: Sample # 4

Sample #: 004 Date Sampled: 03/22/01

Date Received: 03/23/01 Matrix: SOLID

## Volatiles by GC

Reviewed

Benzene	ND	5.0	ug/kg	SW846 8021B
Toluene	ND	5.0	ug/kg	SW846 8021B

(Continued on next page)



## SEVERN TRENT LABORATORIES, INC.

## PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates				PAGE 5
Lot #:	Project Number:	Date Reported:		
PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Client Sample ID: Sample # 4				
Sample #: 004	Date Sampled: 03/22/01		Date Received: 03/23/01	Matrix: SOLID
Volatiles by GC				Reviewed
Ethylbenzene	ND	5.0	ug/kg	SW846 8021B
Xylenes (total)	ND	15	ug/kg	SW846 8021B
Methyl tert-butyl ether	ND	5.0	ug/kg	SW846 8021B
Organochlorine Pesticides				Reviewed
Aldrin	ND	1.7	ug/kg	SW846 8081A
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	3.3	ug/kg	SW846 8081A
4,4'-DDE	ND	3.3	ug/kg	SW846 8081A
4,4'-DDT	ND	3.3	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	3.3	ug/kg	SW846 8081A
Endrin aldehyde	ND	3.3	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	3.3	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	17	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A
PCBs by SW-846 8082				Reviewed
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082

(Continued on next page)



**SEVERN TRENT LABORATORIES, INC.**

## **PRELIMINARY DATA SUMMARY**

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Health Science Associates PAGE 6  
Lot #: ELC230310 Date Reported: 4/02/01

Project Number: 112652      REPORTING      ANALYTICAL  
RESULT      LIMIT      UNITS      METHOD

Client Sample ID: Sample # 4  
Sample #: 004 Date Sampled: 03/22/01 Date Received: 03/23/01 Matrix: SOLID

<b>Extractable Petroleum Hydrocarbons</b>					<b>Reviewed</b>
TPH (as Diesel)	ND	10	mg/kg	SW846 8015B	
<b>Volatile Petroleum Hydrocarbons</b>					<b>Reviewed</b>
TPH (as Gasoline)	ND	1.0	mg/kg	SW846 8015B	
Unknown Hydrocarbon	ND	1.0	mg/kg	SW846 8015B	



# QC DATA ASSOCIATION SUMMARY

E1C230310

## Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	SOLID	SW846 8015B		1085524	1085279
	SOLID	SW846 8015B		1087308	1087176
	SOLID	SW846 8082		1085351	1085270
	SOLID	SW846 8081A		1085353	
	SOLID	SW846 8021B		1087363	1087216
002	SOLID	SW846 8015B		1085524	1085279
	SOLID	SW846 8015B		1087308	1087176
	SOLID	SW846 8082		1085351	1085270
	SOLID	SW846 8081A		1085353	
	SOLID	SW846 8021B		1087363	1087216
003	SOLID	SW846 8015B		1085524	1085279
	SOLID	SW846 8015B		1087308	1087176
	SOLID	SW846 8082		1085351	1085270
	SOLID	SW846 8081A		1085353	
	SOLID	SW846 8021B		1087363	1087216
004	SOLID	SW846 8015B		1085524	1085279
	SOLID	SW846 8015B		1087308	1087176
	SOLID	SW846 8082		1085351	1085270
	SOLID	SW846 8081A		1085353	
	SOLID	SW846 8021B		1087363	1087216

000029



**METHOD BLANK REPORT**

**GC Semivolatiles**

**Client Lot #....:** E1C230310  
**MB Lot-Sample #:** E1C260000-524  
**Analysis Date...:** 03/27/01  
**Dilution Factor:** 1

**Work Order #....:** DX08M1AA  
**Prep Date.....:** 03/26/01  
**Prep Batch #....:** 1085524

**Matrix.....:** SOLID  
**Analysis Time..:** 18:19

<u>PARAMETER</u>	REPORTING			<u>METHOD</u>
	<u>RESULT</u>	<u>LIMIT</u>	<u>UNITS</u>	
TPH (as Diesel)	ND	10	mg/kg	SW846 8015B
SURROGATE	PERCENT	RECOVERY	LIMITS	
Benzo(a)pyrene	RECOVERY	(60 - 130)		
	84			

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**000030**



**METHOD BLANK REPORT**

**GC Volatiles**

**Client Lot #....:** E1C230310  
**MB Lot-Sample #:** E1C280000-308  
**Analysis Date...:** 03/27/01  
**Dilution Factor:** 1

**Work Order #....:** DX3WK1AA  
**Prep Date.....:** 03/27/01  
**Prep Batch #....:** 1087308

**Matrix.....:** SOLID  
**Analysis Time..:** 11:11

<b>PARAMETER</b>	<b>RESULT</b>	<b>REPORTING</b>		<b>METHOD</b>
		<b>LIMIT</b>	<b>UNITS</b>	
TPH (as Gasoline)	ND	1.0	mg/kg	SW846 8015B
Unknown Hydrocarbon	ND	1.0	mg/kg	SW846 8015B
<b>SURROGATE</b>	<b>PERCENT</b>	<b>RECOVERY</b>		<b>LIMITS</b>
		<b>RECOVERY</b>	<b>LIMITS</b>	
a,a,a-Trifluorotoluene (TFT)	91	(60 - 130)		

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.  
Surrogate for C6->C12 integration = 0.1731 86.6% recovery.

**000031**



METHOD BLANK REPORT

GC Volatiles

Client Lot #....: E1C230310  
MB Lot-Sample #: E1C280000-363  
  
Analysis Date...: 03/27/01  
Dilution Factor: 1

Work Order #....: DX38L1AD  
  
Prep Date.....: 03/27/01  
Prep Batch #....: 1087363

Matrix.....: SOLID  
  
Analysis Time..: 21:04

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Benzene	ND	5.0	ug/kg	SW846 8021B
Toluene	ND	5.0	ug/kg	SW846 8021B
Ethylbenzene	ND	5.0	ug/kg	SW846 8021B
Xylenes (total)	ND	15	ug/kg	SW846 8021B
Methyl tert-butyl ether	ND	5.0	ug/kg	SW846 8021B

SURROGATE	PERCENT	RECOVERY	
		RECOVERY	LIMITS
a,a,a-Trifluorotoluene (TFT)	92		(60 - 130)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

000032



**METHOD BLANK REPORT**

**GC Semivolatiles**

**Client Lot #....:** E1C230310  
**MB Lot-Sample #:** E1C260000-351  
**Analysis Date...:** 03/27/01  
**Dilution Factor:** 1

**Work Order #....:** DX06W1AA  
**Prep Date.....:** 03/26/01  
**Prep Batch #....:** 1085351

**Matrix.....:** SOLID  
**Analysis Time..:** 09:53

<u>PARAMETER</u>	<u>RESULT</u>	REPORTING		
		<u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082

<u>SURROGATE</u>	<u>PERCENT</u>	RECOVERY	
		<u>RECOVERY</u>	<u>LIMITS</u>
Decachlorobiphenyl	94	(60 - 140)	
Tetrachloro-m-xylene	95	(60 - 140)	

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**000033**



**METHOD BLANK REPORT**

**GC Semivolatiles**

**Client Lot #....:** E1C230310  
**MB Lot-Sample #:** E1C260000-353  
**Analysis Date...:** 03/28/01  
**Dilution Factor:** 1

**Work Order #....:** DX0561AA  
**Prep Date.....:** 03/26/01  
**Prep Batch #....:** 1085353

**Matrix.....:** SOLID  
**Analysis Time..:** 13:25

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Aldrin	ND	1.7	ug/kg	SW846 8081A
alpha-BHC	ND	1.7	ug/kg	SW846 8081A
alpha-Chlordane	ND	1.7	ug/kg	SW846 8081A
beta-BHC	ND	1.7	ug/kg	SW846 8081A
delta-BHC	ND	1.7	ug/kg	SW846 8081A
4,4'-DDD	ND	3.3	ug/kg	SW846 8081A
4,4'-DDE	ND	3.3	ug/kg	SW846 8081A
4,4'-DDT	ND	3.3	ug/kg	SW846 8081A
Dieldrin	ND	1.7	ug/kg	SW846 8081A
Endrin	ND	3.3	ug/kg	SW846 8081A
Endrin aldehyde	ND	3.3	ug/kg	SW846 8081A
gamma-BHC (Lindane)	ND	1.7	ug/kg	SW846 8081A
gamma-Chlordane	ND	1.7	ug/kg	SW846 8081A
Endosulfan I	ND	1.7	ug/kg	SW846 8081A
Endosulfan II	ND	3.3	ug/kg	SW846 8081A
Endosulfan sulfate	ND	1.7	ug/kg	SW846 8081A
Heptachlor	ND	1.7	ug/kg	SW846 8081A
Heptachlor epoxide	ND	1.7	ug/kg	SW846 8081A
Methoxychlor	ND	17	ug/kg	SW846 8081A
Toxaphene	ND	67	ug/kg	SW846 8081A
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>		
Tetrachloro-m-xylene	125 *	(40 - 120)		
Decachlorobiphenyl	134	(80 - 140)		

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

\* Surrogate recovery is outside stated control limits.

**000034**

357  
358

## LABORATORY CONTROL SAMPLE DATA REPORT

## GC Semivolatiles

**Client Lot #....:** E1C230310      **Work Order #....:** DX08M1AC      **Matrix.....:** SOLID  
**LCS Lot-Sample#:** E1C260000-524  
**Prep Date.....:** 03/26/01      **Analysis Date...:** 03/27/01  
**Prep Batch #....:** 1085524      **Analysis Time..:** 18:49  
**Dilution Factor:** 1

<u>PARAMETER</u>	<u>SPIKE</u>	<u>MEASURED</u>	<u>PERCENT</u>	<u>RECOVERY</u>	<u>METHOD</u>
	<u>AMOUNT</u>	<u>AMOUNT</u>	<u>UNITS</u>	<u>mg/kg</u>	
<b>TPH (as Diesel)</b>	<b>250</b>	<b>202</b>		<b>81</b>	<b>SW846 8015B</b>
<b>SURROGATE</b>			<u>PERCENT</u>	<u>RECOVERY</u>	
Benzo(a)pyrene			<u>RECOVERY</u>	<u>LIMITS</u>	
			80	(60 - 130)	

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000035

2013-09-09

**LABORATORY CONTROL SAMPLE EVALUATION REPORT**

**GC Semivolatiles**

**Client Lot #....:** E1C230310      **Work Order #....:** DX08M1AC      **Matrix.....:** SOLID  
**LCS Lot-Sample#:** E1C260000-524  
**Prep Date.....:** 03/26/01      **Analysis Date...:** 03/27/01  
**Prep Batch #....:** 1085524      **Analysis Time..:** 18:49  
**Dilution Factor:** 1

<u>PARAMETER</u>	<u>PERCENT</u>	<u>RECOVERY</u>	<u>METHOD</u>
<u>RECOVERY</u>		<u>LIMITS</u>	
<b>TPH (as Diesel)</b>	<b>81</b>	(60 - 130)	<b>SW846 8015B</b>
<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>	
Benzo (a) pyrene	80	(60 - 130)	

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

**000036**



LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #....: E1C230310      Work Order #....: DX3WK1AC      Matrix.....: SOLID  
LCS Lot-Sample#: E1C280000-308  
Prep Date.....: 03/27/01      Analysis Date...: 03/28/01  
Prep Batch #....: 1087308      Analysis Time..: 11:12  
Dilution Factor: 1

PARAMETER	SPIKE <u>AMOUNT</u>	MEASURED <u>AMOUNT</u>	PERCENT <u>UNITS</u>	RECOVERY	METHOD
TPH (as Gasoline)	5.00	4.02	mg/kg	80	SW846 8015B
SURROGATE		PERCENT RECOVERY	RECOVERY	LIMITS	
a,a,a-Trifluorotoluene (TFT)		102		(60 - 130)	

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000037

$$\begin{cases} \frac{1}{\alpha^2} < \frac{1}{\beta^2} < \frac{1}{\gamma^2} \\ \beta > \alpha > \gamma \end{cases}$$

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #....: E1C230310      Work Order #....: DX3WK1AC      Matrix.....: SOLID  
LCS Lot-Sample#: E1C280000-308  
Prep Date.....: 03/27/01      Analysis Date...: 03/28/01  
Prep Batch #....: 1087308      Analysis Time..: 11:12  
Dilution Factor: 1

PARAMETER	PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>	METHOD
TPH (as Gasoline)	80	(80 - 140)	<b>SW846 8015B</b>
SURROGATE	PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>	
a,a,a-Trifluorotoluene (TFT)	102	(60 - 130)	

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

**000038**



## LABORATORY CONTROL SAMPLE DATA REPORT

## GC Volatiles

**Client Lot #....:** E1C230310      **Work Order #....:** DX38L1AE      **Matrix.....:** SOLID  
**LCS Lot-Sample#:** E1C280000-363  
**Prep Date.....:** 03/27/01      **Analysis Date...:** 03/27/01  
**Prep Batch #....:** 1087363      **Analysis Time..:** 20:11  
**Dilution Factor:** 1

<u>PARAMETER</u>	<u>SPIKE</u>	<u>MEASURED</u>	<u>UNITS</u>	<u>PERCENT</u>	<u>METHOD</u>
	<u>AMOUNT</u>	<u>AMOUNT</u>		<u>RECOVERY</u>	
Benzene	<b>50.0</b>	<b>50.8</b>	ug/kg	102	SW846 8021B
Toluene	<b>50.0</b>	<b>51.8</b>	ug/kg	104	SW846 8021B
Ethylbenzene	<b>50.0</b>	<b>47.7</b>	ug/kg	95	SW846 8021B
Xylenes (total)	<b>150</b>	<b>157</b>	ug/kg	105	SW846 8021B
<b>m-Xylene &amp; p-Xylene</b>	<b>100</b>	<b>106</b>	ug/kg	106	SW846 8021B
<b>o-Xylene</b>	<b>50.0</b>	<b>50.8</b>	ug/kg	102	SW846 8021B

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
a,a,a-Trifluorotoluene (TFT)	98	(60 - 130)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000039



## LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC Volatiles

**Client Lot #....:** E1C230310      **Work Order #....:** DX38L1AE      **Matrix.....:** SOLID  
**LCS Lot-Sample#:** E1C280000-363  
**Prep Date.....:** 03/27/01      **Analysis Date...:** 03/27/01  
**Prep Batch #....:** 1087363      **Analysis Time..:** 20:11  
**Dilution Factor:** 1

<u>PARAMETER</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	<u>METHOD</u>
Benzene	102	(80 - 125)	SW846 8021B
Toluene	104	(80 - 125)	SW846 8021B
Ethylbenzene	95	(80 - 120)	SW846 8021B
Xylenes (total)	105	(80 - 120)	SW846 8021B
m-Xylene & p-Xylene	106	(80 - 120)	SW846 8021B
o-Xylene	102	(80 - 120)	SW846 8021B

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
a,a,a-Trifluorotoluene (TFT)	98	(60 - 130)

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

000040



LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #....: E1C230310      Work Order #....: DX06W1AC      Matrix.....: SOLID  
LCS Lot-Sample#: E1C260000-351  
Prep Date.....: 03/26/01      Analysis Date...: 03/27/01  
Prep Batch #....: 1085351      Analysis Time..: 10:33  
Dilution Factor: 1

PARAMETER	SPIKE <u>AMOUNT</u>	MEASURED <u>AMOUNT</u>	UNITS	PERCENT <u>RECOVERY</u>	METHOD
<b>Aroclor 1016</b>	<b>333</b>	<b>340</b>	<b>ug/kg</b>	<b>102</b>	<b>SW846 8082</b>
<b>Aroclor 1260</b>	<b>333</b>	<b>337</b>	<b>ug/kg</b>	<b>101</b>	<b>SW846 8082</b>
<hr/>					
<hr/>					
SURROGATE		PERCENT <u>RECOVERY</u>	RECOVERY <u>LIMITS</u>		
Decachlorobiphenyl		102	(60 - 140)		
Tetrachloro-m-xylene		36 *	(60 - 140)		

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

\* Surrogate recovery is outside stated control limits.

**000041**

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #....: E1C230310      Work Order #....: DX06W1AC      Matrix.....: SOLID  
LCS Lot-Sample#: E1C260000-351  
Prep Date.....: 03/26/01      Analysis Date...: 03/27/01  
Prep Batch #....: 1085351      Analysis Time...: 10:33  
Dilution Factor: 1

<u>PARAMETER</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	<u>METHOD</u>
Aroclor 1016	<b>102</b>	(65 - 130)	<b>SW846 8082</b>
Aroclor 1260	<b>101</b>	(70 - 130)	<b>SW846 8082</b>
<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>	
Decachlorobiphenyl	102	(60 - 140)	
Tetrachloro-m-xylene	36 *	(60 - 140)	

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

\* Surrogate recovery is outside stated control limits.

000042



## **LABORATORY CONTROL SAMPLE DATA REPORT**

## GC Semivolatiles

PARAMETER	SPIKE	MEASURED		PERCENT		METHOD
	AMOUNT	AMOUNT	UNITS	RECOVERY	RPD	
<b>Aldrin</b>	6.67	6.68	ug/kg	100		SW846 8081A
	6.67	8.24	ug/kg	124	21	SW846 8081A
<b>4,4'-DDT</b>	16.7	15.1	ug/kg	91		SW846 8081A
	16.7	20.9	a,pug/kg	125	32	SW846 8081A
<b>Dieldrin</b>	16.7	15.9	ug/kg	95		SW846 8081A
	16.7	20.1	a ug/kg	121	24	SW846 8081A
<b>Endrin</b>	16.7	16.0	ug/kg	96		SW846 8081A
	16.7	20.4	ug/kg	123	24	SW846 8081A
<b>gamma-BHC (Lindane)</b>	6.67	6.65	ug/kg	100		SW846 8081A
	6.67	7.84	ug/kg	118	16	SW846 8081A
<b>Heptachlor</b>	6.67	6.33	ug/kg	95		SW846 8081A
	6.67	7.75	ug/kg	116	20	SW846 8081A

<u>SURROGATE</u>	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	11 *	(40 - 120)
	14 *	(40 - 120)
Decachlorobiphenyl	80	(80 - 140)
	134	(80 - 140)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters

\* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.

000043



## **LABORATORY CONTROL SAMPLE EVALUATION REPORT**

## GC Semivolatiles

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Aldrin	100	(50 - 140)			SW846 8081A
	124	(50 - 140)	21	(0-25)	SW846 8081A
4,4'-DDT	91	(80 - 120)			SW846 8081A
	125 a,p	(80 - 120)	32	(0-25)	SW846 8081A
Dieldrin	95	(80 - 120)			SW846 8081A
	121 a	(80 - 120)	24	(0-25)	SW846 8081A
Endrin	96	(85 - 130)			SW846 8081A
	123	(85 - 130)	24	(0-25)	SW846 8081A
gamma-BHC (Lindane)	100	(70 - 120)			SW846 8081A
	118	(70 - 120)	16	(0-25)	SW846 8081A
Heptachlor	95	(75 - 130)			SW846 8081A
	116	(75 - 130)	20	(0-25)	SW846 8081A

<u>SURROGATE</u>	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	11 * 14 *	(40 - 120) (40 - 120)
Decachlorobiphenyl	80 134	(80 - 140) (80 - 140)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print denotes control parameters**

\* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

p Relative percent difference (RPD) is outside stated control limits.



## MATRIX SPIKE SAMPLE DATA REPORT

## GC Semivolatiles

PARAMETER	SAMPLE	SPike	MEASRD	PERCENT			
	AMOUNT	AMT	AMOUNT	UNITS	RECOVERY	RPD	METHOD
TPH (as Diesel)	ND	250	172	mg/kg	69		SW846 8015B
	ND	250	158	mg/kg	63	8.5	SW846 8015B
SURROGATE	PERCENT			RECOVERY			
	<u>RECOVERY</u>			<u>LIMITS</u>			
Benzo(a)pyrene	69			(60 - 130)			
	60			(60 - 130)			

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters

000045



## MATRIX SPIKE SAMPLE EVALUATION REPORT

## GC Semivolatiles

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
<b>TPH (as Diesel)</b>	<b>69</b>	<b>(60 - 130)</b>			<b>SW846 8015B</b>
	<b>63</b>	<b>(60 - 130)</b>	<b>8.5</b>	<b>(0-35)</b>	<b>SW846 8015B</b>
<b>SURROGATE</b>		<u>PERCENT RECOVERY</u>		<u>RECOVERY LIMITS</u>	
Benzo(a)pyrene		69		(60 - 130)	
		60		(60 - 130)	

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters

000046



# MATRIX SPIKE SAMPLE DATA REPORT

## GC Volatiles

PARAMETER	SAMPLE	SPIKE	MEASRD	PERCENT					
	AMOUNT	AMT	AMOUNT	UNITS	RECOVERY	RPD	METHOD		
TPH (as Gasoline)	ND	5.00	5.27	mg/kg	105		SW846 8015B		
	ND	5.00	5.24	mg/kg	105	0.62	SW846 8015B		
<b>SURROGATE</b>			<b>PERCENT</b>			<b>RECOVERY</b>			
<i>a,a,a-Trifluorotoluene</i>			<b>RECOVERY</b>		<b>LIMITS</b>				
(TFT)			116		(60 - 130)				
			110		(60 - 130)				

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters



## MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
<b>TPH (as Gasoline)</b>	<b>105</b>	<b>(80 - 140)</b>			<b>SW846 8015B</b>
	<b>105</b>	<b>(80 - 140)</b>	<b>0.62</b>	<b>(0-40)</b>	<b>SW846 8015B</b>
<u>SURROGATE</u>		<u>PERCENT RECOVERY</u>		<u>RECOVERY LIMITS</u>	
a,a,a-Trifluorotoluene (TFT)		116		(60 - 130)	
		110		(60 - 130)	

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters



**MATRIX SPIKE SAMPLE DATA REPORT**

**GC Volatiles**

<b>Client Lot #....:</b> E1C230310	<b>Work Order #....:</b> DXW5F1AL-MS	<b>Matrix.....:</b> SOLID
<b>MS Lot-Sample #:</b> E1C230310-004	DXW5F1AM-MSD	
<b>Date Sampled....:</b> 03/22/01	<b>Date Received...:</b> 03/23/01 13:20	<b>MS Run #.....:</b> 1087216
<b>Prep Date.....:</b> 03/27/01	<b>Analysis Date...:</b> 03/28/01	
<b>Prep Batch #....:</b> 1087363	<b>Analysis Time..:</b> 00:10	
<b>Dilution Factor:</b> 1		

<b>PARAMETER</b>	<b>SAMPLE</b>	<b>SPIKE</b>	<b>MEASRD</b>	<b>PERCENT</b>			
	<b>AMOUNT</b>	<b>AMT</b>	<b>AMOUNT</b>	<b>UNITS</b>	<b>RECOVERY</b>	<b>RPD</b>	<b>METHOD</b>
<b>Benzene</b>	ND	<b>50.0</b>	<b>47.1</b>	ug/kg	<b>94</b>		<b>SW846 8021B</b>
	ND	<b>50.0</b>	<b>47.3</b>	ug/kg	<b>95</b>	<b>0.35</b>	<b>SW846 8021B</b>
<b>Toluene</b>	ND	<b>50.0</b>	<b>46.5</b>	ug/kg	<b>93</b>		<b>SW846 8021B</b>
	ND	<b>50.0</b>	<b>45.9</b>	ug/kg	<b>92</b>	<b>1.3</b>	<b>SW846 8021B</b>
<b>Ethylbenzene</b>	ND	<b>50.0</b>	<b>42.8</b>	ug/kg	<b>86</b>		<b>SW846 8021B</b>
	ND	<b>50.0</b>	<b>43.4</b>	ug/kg	<b>87</b>	<b>1.4</b>	<b>SW846 8021B</b>
<b>Xylenes (total)</b>	ND	<b>150</b>	<b>140</b>	ug/kg	<b>93</b>		<b>SW846 8021B</b>
	ND	<b>150</b>	<b>141</b>	ug/kg	<b>94</b>	<b>0.93</b>	<b>SW846 8021B</b>
<b>m-Xylene &amp; p-Xylene</b>	ND	<b>100</b>	<b>94.4</b>	ug/kg	<b>94</b>		<b>SW846 8021B</b>
	ND	<b>100</b>	<b>94.8</b>	ug/kg	<b>95</b>	<b>0.43</b>	<b>SW846 8021B</b>
<b>o-Xylene</b>	ND	<b>50.0</b>	<b>45.1</b>	ug/kg	<b>90</b>		<b>SW846 8021B</b>
	ND	<b>50.0</b>	<b>46.1</b>	ug/kg	<b>92</b>	<b>2.2</b>	<b>SW846 8021B</b>
<b>SURROGATE</b>				<b>PERCENT</b>	<b>RECOVERY</b>		
<b>a,a,a-Trifluorotoluene</b>				<b>RECOVERY</b>	<b>LIMITS</b>		
(TFT)				<b>104</b>	<b>(60 - 130)</b>		
				<b>105</b>	<b>(60 - 130)</b>		

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters



**MATRIX SPIKE SAMPLE EVALUATION REPORT**

**GC Volatiles**

<b>Client Lot #....:</b> E1C230310	<b>Work Order #....:</b> DXW5F1AL-MS	<b>Matrix.....:</b> SOLID
<b>MS Lot-Sample #:</b> E1C230310-004	DXW5F1AM-MSD	
<b>Date Sampled....:</b> 03/22/01	<b>Date Received...:</b> 03/23/01 13:20	<b>MS Run #.....:</b> 1087216
<b>Prep Date.....:</b> 03/27/01	<b>Analysis Date...:</b> 03/28/01	
<b>Prep Batch #....:</b> 1087363	<b>Analysis Time..:</b> 00:10	
<b>Dilution Factor:</b> 1		

<b>PARAMETER</b>	<b>PERCENT</b>	<b>RECOVERY</b>	<b>RPD</b>	<b>LIMITS</b>	<b>METHOD</b>
	<b>RECOVERY</b>	<b>LIMITS</b>	<b>RPD</b>	<b>LIMITS</b>	
Benzene	94	(80 - 125)			SW846 8021B
	95	(80 - 125)	0.35	(0-30)	SW846 8021B
Toluene	93	(80 - 125)			SW846 8021B
	92	(80 - 125)	1.3	(0-30)	SW846 8021B
Ethylbenzene	86	(80 - 120)			SW846 8021B
	87	(80 - 120)	1.4	(0-30)	SW846 8021B
Xylenes (total)	93	(80 - 120)			SW846 8021B
	94	(80 - 120)	0.93	(0-30)	SW846 8021B
m-Xylene & p-Xylene	94	(80 - 120)			SW846 8021B
	95	(80 - 120)	0.43	(0-30)	SW846 8021B
o-Xylene	90	(80 - 120)			SW846 8021B
	92	(80 - 120)	2.2	(0-30)	SW846 8021B
<hr/>					
<b>SURROGATE</b>	<b>PERCENT</b>	<b>RECOVERY</b>	<b>RECOVERY</b>		
	<b>RECOVERY</b>	<b>LIMITS</b>	<b>LIMITS</b>		
a,a,a-Trifluorotoluene (TFT)	104		(60 - 130)		
	105		(60 - 130)		

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print denotes control parameters**

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## MATRIX SPIKE SAMPLE DATA REPORT

## GC Semivolatiles

PARAMETER	SAMPLE	SPIKE	MEASRD	PERCENT			
	AMOUNT	AMT	AMOUNT	UNITS	RECOVERY	RPD	METHOD
<b>Aroclor 1016</b>	ND	333	335	ug/kg	101		SW846 8082
	ND	333	319	ug/kg	96	4.8	SW846 8082
<b>Aroclor 1260</b>	ND	333	331	ug/kg	99		SW846 8082
	ND	333	326	ug/kg	98	1.7	SW846 8082

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
Decachlorobiphenyl	98	(60 - 140)
	96	(60 - 140)
Tetrachloro-m-xylene	82	(60 - 140)
	69	(60 - 140)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters



## MATRIX SPIKE SAMPLE EVALUATION REPORT

## GC Semivolatiles

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
<b>Aroclor 1016</b>	<b>101</b>	<b>(65 - 130)</b>			<b>SW846 8082</b>
	<b>96</b>	<b>(65 - 130)</b>	<b>4.8</b>	<b>(0-30)</b>	<b>SW846 8082</b>
<b>Aroclor 1260</b>	<b>99</b>	<b>(70 - 130)</b>			<b>SW846 8082</b>
	<b>98</b>	<b>(70 - 130)</b>	<b>1.7</b>	<b>(0-30)</b>	<b>SW846 8082</b>

<u>SURROGATE</u>	<u>PERCENT</u>	<u>RECOVERY</u>
	<u>RECOVERY</u>	<u>LIMITS</u>
Decachlorobiphenyl	98	(60 - 140)
	96	(60 - 140)
Tetrachloro-m-xylene	82	(60 - 140)
	69	(60 - 140)

**NOTE (S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

**Bold print** denotes control parameters



## **SITE PLAN**

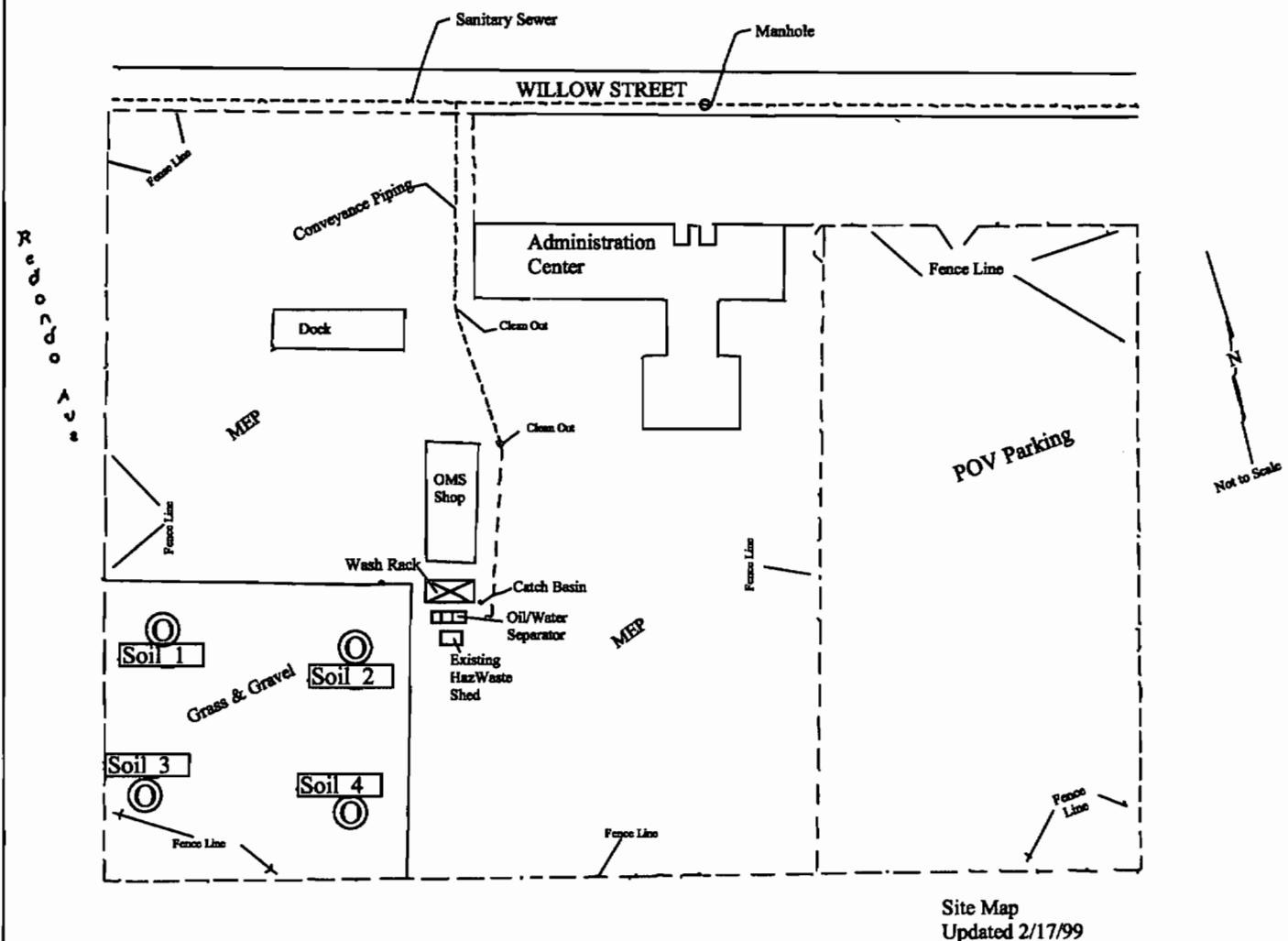


Figure: Site Map

Project: 01LA461



# Schroeder Hall USARC Long Beach, CA



Originator: T.S.

Date(s): 03/22/2001

ADECCO TECHNICAL  
400 S. Tennessee St.  
McKinney, TX 75069

**LEGEND:**

○ Denotes Approximate Sample Location

Health  
Science  
Associates

